

Comments on the proposed designation of a neotype for *Coelophysis bauri* (Cope, 1887) (Reptilia, Saurischia)

(Case 2840; see BZN 49: 276–279; 50: 147–151, 236–239)

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In their proposal of the new binomen *Rioarribasaurus colberti*, Hunt & Lucas (1991) declared that *Coelophysis bauri* (Cope, 1887) is a nomen dubium on the grounds that none of the syntypes are diagnostic. In the same publication (which was entitled '*Rioarribasaurus*, a new name for a late Triassic dinosaur from New Mexico') they stated: 'We believe an effort to petition the International Commission on Zoological Nomenclature to conserve the name *Coelophysis bauri*, by designating a neotype, would be met with rejection ...'. This statement indicates that the new binomen was intended to replace *C. bauri*, rather than to denote a different taxon, as they have subsequently elaborated (BZN 50: 147–150). The purpose of the application in Case 2840 is to establish a neotype for *C. bauri*.

Despite the claims of Hunt & Lucas (1991 and BZN 50: 147–150), Lucas & Hunt (1992) and Sullivan (BZN 50: 150–151), the type locality of the original *Coelophysis* material collected by David Baldwin somewhere in the vicinity of modern Ghost Ranch cannot be proven to be *not* the same locality that Colbert discovered in 1947. No records exist that precisely identify Baldwin's locality. The locality cited by him as 'Arroyo Seco' is the major extant drainage for all of the northern half of Ghost Ranch, including the subsidiary tributary of Arroyo Yeso which drains the Ghost Ranch dinosaur quarry. This drainage system has been eroding Triassic bedrock at Ghost Ranch since the Pleistocene. Although we do not know where in this drainage Baldwin collected, it is not unreasonable to assume that the skeletal material he collected from Arroyo Seco could have been from the present Ghost Ranch quarry. Differences in preservation between originally collected material and the present Ghost Ranch quarry specimens may be due to differential subaerial exposure. Baldwin's material was from surface or near-surface material, whereas specimens collected since Colbert's discovery in 1947 have been deeply buried and hitherto unexposed bones.

The assignment of stratigraphic position of the Ghost Ranch quarry to the Rock Point Formation of the Chinle Group as argued by Hunt & Lucas (1991, 1992 and BZN 50: 147–150) follows their revisionary stratigraphic nomenclature (Hunt & Lucas, 1992), which has not been tested. Therefore, nomenclatural disputes related to differences in stratigraphic opinion are inappropriate in this case. According to Hunt & Lucas (BZN 50: 148, para. 5) '... there is only one fossil locality in the Rock Point Formation, and this is the Ghost Ranch quarry' and 'the majority of fossiliferous strata in the area belong to the Petrified Forest Formation'. Whether there are fewer

or more fossils found from higher or lower in these Triassic strata may be only a reflection of ease in prospecting and has little if any bearing on arguments regarding the stratigraphic position of either the original (Baldwin) type locality of *Coelophysis* or the Ghost Ranch quarry. Contrary to their claim that it is 'very unlikely that Cope's specimens came from' the Ghost Ranch quarry locality and 'most probably derive from' a lower stratigraphic position, we argue that it is indeed quite possible that the original materials and the Ghost Ranch quarry fossils are from the same site or from nearby in the same horizon.

Hunt & Lucas (1991) correctly remarked on the fact that 'the name *Coelophysis* [is] well entrenched in the scientific literature ...' but now contradict that statement by saying (BZN 50: 149, para. 7): 'This usage [the generic name *Coelophysis*] is only entrenched in a technical literature of specialists in dinosaur studies ...'. Moreover, their claim that it is '... irrelevant that the Ghost Ranch dinosaur (not named as *Coelophysis*) is part of the logo of the New Mexico Museum of Natural History ...' contradicts their earlier statement (Hunt & Lucas, 1991) that '... the name *Coelophysis* ... is the well publicized name of the official state fossil of the state of New Mexico'. The name is widely used in college level textbooks, and has been used repeatedly in television documentaries about dinosaurs. It is very extensively used in both technical and popular literature, including field guides and encyclopedias.

Hunt & Lucas (BZN 50: 149, para. 6) say that the obturator foramen is present in one *C. bauri* specimen (AMNH 7224) figured by Huene (1915) but is absent in all the material from the Ghost Ranch quarry. However, some of the recently prepared Ghost Ranch fossils do indicate an obturator foramen (as mentioned by Sullivan in BZN 50: 151, para. 2). The presence or absence of the obturator foramen may have been an ontogenetic character, indicating individual variation in this trait, similar to the variability in the structure of the mesotarsal joint and in co-ossification of bones in the hind foot described by Colbert (1989, pp. 108–110). The argument presented by Hunt & Lucas (BZN 50: 149, para. 6) that the presence or absence of the obturator foramen is a generic level distinction in all dinosaurs is contradicted by the observation that this feature is variable in the single population represented by the dinosaurs in the Ghost Ranch quarry. Thus, the argument that the presence or absence of the obturator foramen can be used to distinguish between the material collected by Baldwin and the Ghost Ranch quarry dinosaurs is insupportable.

Hunt & Lucas claim (BZN 50: 149, para. 8) that the establishment of a neotype for *Coelophysis bauri* would be a 'recipe for taxonomic anarchy'. In view of the wide use of the name *Coelophysis*, we think just the opposite: the neotype should be established as a move towards stability.

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I support the application of E.H. Colbert and others to set aside all previous type fixations for *Coelophysis bauri* and to designate the skeleton AMNH 7224 as neotype. Such an action is consistent with the basic goal of the Code, i.e. to provide the maximum continuity and universality in the use of scientific names for animals.

In their reply to Colbert et al., Hunt & Lucas (BZN 50: 147–150) object to the application on the grounds that *Coelophysis* 'is only used in a limited technical